REMARKS

Claims 39, 47-49 and 55 have been amended. No new matter has been added. Claims 1-38 and 46 have been canceled. Thus, claims 39-45 and 47-59 remain pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 39-51 and 53-59 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mahadevan-Jansen (U.S. Patent. No. 5,842,995) (hereinafter "Mahadevan") in view of Anidjar (Publication entitled "Ultraviolet Laser-Induced Autofluorescence Distinction Between Malignant and Normal Urothelial Cells and Tissues" to Anidjar et al.).

Amended claim 39 recites a tissue spectroscopy device comprising "a spectrometer comprising a distal end, said distal end comprising: a light emitting portion providing only ultraviolet (UV) light to tissue, a light detector; *a substrate, wherein the light emitting portion and the light detector are both disposed on a first surface of the substrate;* and an interventional device for delivering said spectrometer to a tissue."

Mahadevan fails to teach or suggest *"a substrate, wherein the light emitting portion and the light detector are both disposed on a first surface of the substrate,"* as recited in claim 39. Rather, the excitation fiber and collection fibers of Mahadevan are fixed in place within a hollow tubular probe with a glue, epoxy or resin. (*See* Mahadevan, col. 6, ll. 28-31). In the Non-Final Office Action, the Examiner has analogized the probe casing of Mahadevan to the "substrate" recited in claim 39. (*See* 3/17/09 Office Action, p. 2). It is respectfully submitted that the Examiner has improperly expanded the definition of the term "substrate" in support of this rejection. Rather, as made evident by the Specification and claims, the present invention is directed to the term "substrate" as defined in the field of microelectronics. Specifically, a substrate is defined as "a dielectric or semiconductor slab over which active devices, planar transmission lines, and circuit components are fabricated." (*See* Comprehensive Dictionary of Electrical Engineering, p. 617). This definition is further supported by the Specification, which is clearly directed to a substrate wherein various components are etched or deposited thereonto,

as those skilled in the art will understand. (*See* Specification, ¶ [0009], [0010], [0026], [0031]). In contrast, the device of Mahadevan employs a fiber optic delivery system wherein the optical fibers extend completely through the probe to deliver light and thus do not employ any microelectronic components. (*See* Mahadevan, col. 6, ll. 22-40). It is therefore respectfully submitted that Mahadevan does not teach the use of a substrate as recited in claim 39 and furthermore, that there would be no motivation to employ a substrate in the Mahadevan device since a microelectronics system is not taught therein. Rather, such a modification would require a complete redesign of the device of Mahadevan. Anidjar fails to cure this deficiency in Mahadevan. Rather, since the system of Anidjar is configured for in vitro use, there would be no motivation to employ a microelectronics component therein, as those skilled in the art will understand. It is therefore respectfully submitted that Mahadevan does not teach or suggest a tissue spectroscopy device comprising "a substrate, wherein the light emitting portion and the light detector are both disposed on a first surface of the substrate," as recited in claim 39 and that claim 39 is allowable for at least this reason.

It is further submitted that one skilled in the art would not have been motivated to apply the in-vitro laser-induced autofluorescence system of Anidjar in an in vivo device as taught by Mahadevan. The Examiner has agreed that Anidjar does not teach an in vivo device and has further contended that Anidjar provides a motivation to combine the disclosed method with an in vivo method. (*See* 3/17/09 Office Action, p. 5). However, it is respectfully submitted that Anidjar explicitly states that the method addressed in Anidjar can constitute a preliminary step to performing in vivo LIAFS, thus confirming that the method of Anidjar as taught cannot itself be performed in vivo. (*See* Anidjar, p. 336, ¶ 3). It in unclear how the Examiner has interpreted this recitation to constitute motivation for the 103 modification since Anidjar is merely stating that the recited in vitro method may be performed *prior to* performing an in vivo procedure. It is submitted that the mere recitation that a first procedure can be performed prior to performing a second procedure does not provide motivation for combining elements of these procedures with one another. Applicant therefore maintains that a complete redesign of the device disclosed by Anidjar would be necessary to perform an *in vivo* study as proposed by the Examiner and that Anidjar does not give any direction toward such a redesign. Thus, it is respectfully submitted that the Examiner's assumption that the method of Anidjar be applied in-vivo to the Mahadevan

disclosure would not have been an obvious or feasible modification of the cited references and therefore constitutes an improper hindsight reconstruction of the invention.

It is therefore respectfully submitted that Mahadevan and Anidjar, taken either alone or in combination, fail to teach or suggest a tissue spectroscopy device comprising "a light emitting portion providing only ultraviolet (UV) light to tissue, a light detector" in combination with "*a substrate, wherein the light emitting portion and the light detector are both disposed on a first surface of the substrate*," as recited in claim 39. Therefore, Applicant submits that claim 39 is allowable for at least the reasons previously mentioned. Because claims 40-45 and 47-59 depend from and, therefore, include the limitations of claim 39, it is respectfully submitted that these claims are also allowable.

Claim 55 recites limitations substantially similar to those of the amended claim 39, including "providing a spectrometer comprising a distal end, said distal end comprising a light emitting portion and a light detector *disposed on a first surface of a substrate*" and "*transmitting only ultraviolet (UV) light through said light emitting portion to illuminate said tissue*." Thus, it is respectfully submitted that claim 55 is allowable for the same reasons noted above in regard to claim 39. Because claims 56-58 depend from and, therefore, include the limitations of claim 55, it is respectfully submitted that these claims are also allowable.

Claim 52 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Mahadevan in view of Anidjar in further view of U.S. Patent No. 5,503,559 to Vari.

Claim 52 depends from and therefore includes all of the limitations of claim 39. As noted above, Mahadevan and Anidjar, taken alone or in combination, fail to teach or suggest the limitations of claim 39. Vari fails to cure this deficiency. It is therefore respectfully submitted that claim 39 and its dependent claim 52 are allowable over Mahadevan, Anidjar and Vari, taken alone or in any combination.

Conclusion

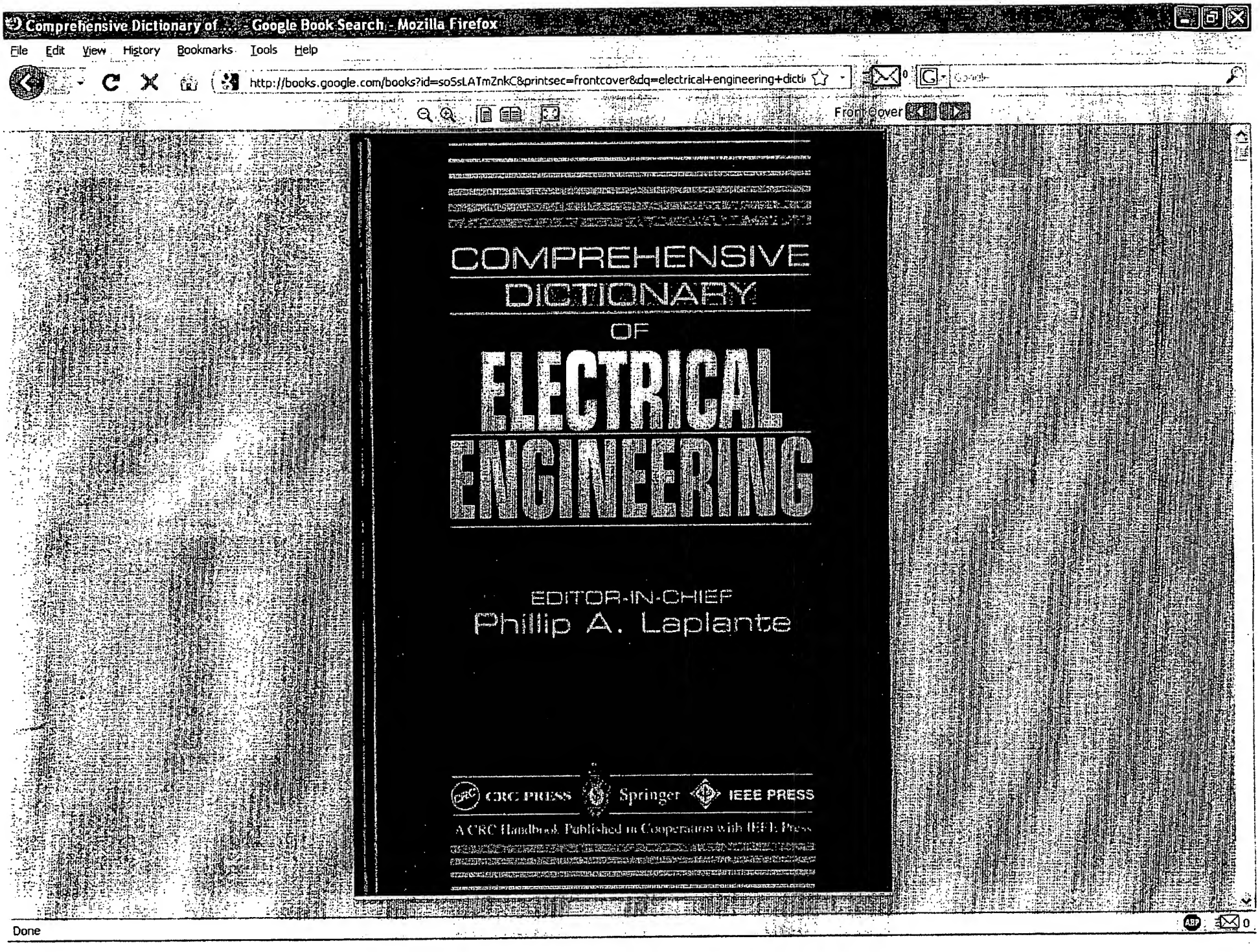
In light of the foregoing, Applicant respectfully submits that all of the presently pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated: May 18, 2009

By: _____

Oleg F. Kaplun (Reg. No. 45,559)
Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, New York 10038
Tel: (212) 212-619-6000
Fax: (212) 619-0276



electromagnetic spectrum corresponding to wavelengths less than a millimeter, but longer than those of the long-wave infrared (> 20–30 μm).

subband coding *See* sub-band coding.

subchannel I/O the portion of a channel subsystem that consists of a control unit module, the connections between the channel subsystem and the control unit module, and the connections between the control unit module and the devices under its control. In earlier versions of the IBM channel architecture, the subchannel was known as an I/O channel.

subcircuit a simulation approach that allows an efficient description of repetitive circuitry.

subjective contour illusory contours perceived by the visual system even in the presence of no real intensity change. A typical example is Kanizsa triangle.

submersible transformer a transformer, used in underground distribution work, which is capable of of operation while submerged in water.

subroutine a group of instructions written to perform a task, independent of a main program; can be accessed by a program or another subroutine to perform the task.

subroutine call and return (IE) the subroutine call is a specialized JUMP or BRANCH instruction that provides a means to return to the instruction following the call instruction after the subroutine has been completed. A RETURN instruction is usually provided for this purpose.

subsampling pyramid a spatial domain hierarchy is generated by repeatedly subsampling the original image data. The reconstruction at any level simply uses the subsampled points from all previous levels in conjunction with the new points from the current level.

subsidiary communication authorization (SCA) services for paging, data transmission, specialized foreign language programs, radio readings services, military load management and background muzak using multiplexed subcarriers from 53–99 kHz in connection with broadcast FM.

subspace based algorithm based on splitting the whole space into two orthogonal complements, the signal and noise subspaces, and exploiting properties of the desired signal in these two subspaces. *See also* MUSIC, ESPRIT, signal subspace, noise subspace.

substation a junction point in the electric network. The incoming and outgoing lines are connected to a busbar through circuit breakers.

substation battery a battery used to provide operating energy for the protective relay operations and to initiate circuit breaker operations in a generating substation. The battery is necessary, as the equipment must work reliably during severe voltage sags and outages on the AC system.

substrate a dielectric or semiconductor slab over which active devices, planar transmission lines, and circuit components are fabricated. This can be a PCB, a ceramic, or a silicon or other semiconductor wafer that has electronic components interconnected to perform a circuit function. *See also* wafer.

subsynchronous resonance an electric power system condition where the electric network exchanges energy with a turbine generator at one or more of the natural frequencies of the combined system below the synchronous frequency of the system.

subthreshold the range of gate biases corresponding to the "off" condition of the MOSFET. In this regime, the MOSFET is not perfectly "off" but conducts a leakage current that exists

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